

Water Quality Goals Established by the State of California, USEPA, and the Regional Water Quality Control Boards

Parameter of Concern	California Inland Surface Waters Plan ^c Numerical Water Quality Objectives Freshwater Aquatic Life Protection				USEPA National Ambient Water Quality Criteria ^e Freshwater Aquatic Life Protection Recommended Criteria			Regional Water Quality Control Boards ^j 1995 Water Quality Control Plans					
	4-day average	Daily Average	1-hour Average	Instantaneous Maximum	Continuous Concentration (4 day Average)	24-hour Average	Maximum Concentration (1-hour Average)	Region II				Region V	
								Value	Sacramento River	San Joaquin River	Delta	Value	Bay
METALS													
Cadmium ^d	0.38 - 3.4 µg/l ^b		0.82 - 19 µg/l ^b		0.37 - 2.9 µg/l ^a		0.82 - 17 µg/l ^a	0.0022 mg/l ^f	River and tributaries from above State Hwy 32 bridge at Hamilton City				
Copper ^d	3.6 - 39 µg/l ^b		4.8 - 65 µg/l ^b		3.5 - 37 µg/l ^a		4.6 - 63 µg/l ^a	0.0056 mg/l ^f	River and tributaries from above State Hwy 32 bridge at Hamilton City				
								0.01 mg/l ^g	Keswick Dam to I Street Bridge		Unspecified		
Mercury ^c			2.4 µg/l		0.012 µg/l ^b		2.1 µg/l ^a						
Selenium	5 µg/l		20 µg/l		5.0 µg/l ^b		20 µg/l ^b	0.012 mg/l; 0.005 mg/l ^h		Mouth of Merced River to Vernalis			
								0.002 mg/l ⁱ	Water supplies used for waterfowl habitat in specific areas				
Zinc ^d	33 - 340 µg/l ^b		36 - 380 µg/l ^b		32 - 340 µg/l ^a		35 - 370 µg/l ^a	0.1 mg/l ^g	Keswick Dam to I Street Bridge		Unspecified		
								0.016 mg/l ^f	River and tributaries from above State Hwy 32 bridge at Hamilton				

^a dissolved form

^b total recoverable

^c includes Methyl Mercury

^d varies in relation to water hardness

^e data compiled from Jon Marshack. July 1995. A Compilation of Water Quality Goals.

^f The effects of these concentrations were measured by exposing test organisms to dissolved aqueous solutions of 40 mg/l hardness that had been filtered through a 0.45 micron membrane filter.

Where deviations from 40 mg/l of water hardness occur, the objectives, in mg/l shall be determined using the following formulas:

$$\text{Cu} = e^{(0.905)(\ln \text{hardness})} - 1.612 \times 10^3$$

$$\text{Zn} = e^{(0.830)(\ln \text{hardness})} - 0.289 \times 10^3$$

$$\text{Cd} = e^{(1.160)(\ln \text{hardness})} - 5.777 \times 10^3$$

^g Does not apply to Sacramento River above State Hwy 32 bridge at Hamilton City.

^h 4-day average; The Regional Water Control Board has adopted these selenium concentrations. These selenium concentrations were promulgated by USEPA on 22 December 1992 after USEPA disapproved the Regional Water Board's selenium concentrations. The selenium concentrations promulgated by USEPA are currently in effect, and are provided in this table solely for reference.

ⁱ This objective applies to any water supplies used for waterfowl habitat in the Grassland Water District, San Luis National Wildlife Refuge, and Los Banos State Wildlife Area.

^j The 1995 State Water Resources Control Board Water Quality Plan did not contain standards for metals.